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September 22, 2005 (Revised)

Mr. Bill Sommer
Rancho Verona
795 Poinsettia Pk. St.
Encinitas, CA 92024

RE: ACOUSTICAL SITE ASSESSMENT
RANCHO VERONA – SAN DIEGO CA
APN 187-100-11, ER 04-08-041, P04-050
ISE REPORT #05-035

Dear Mr. Sommer:

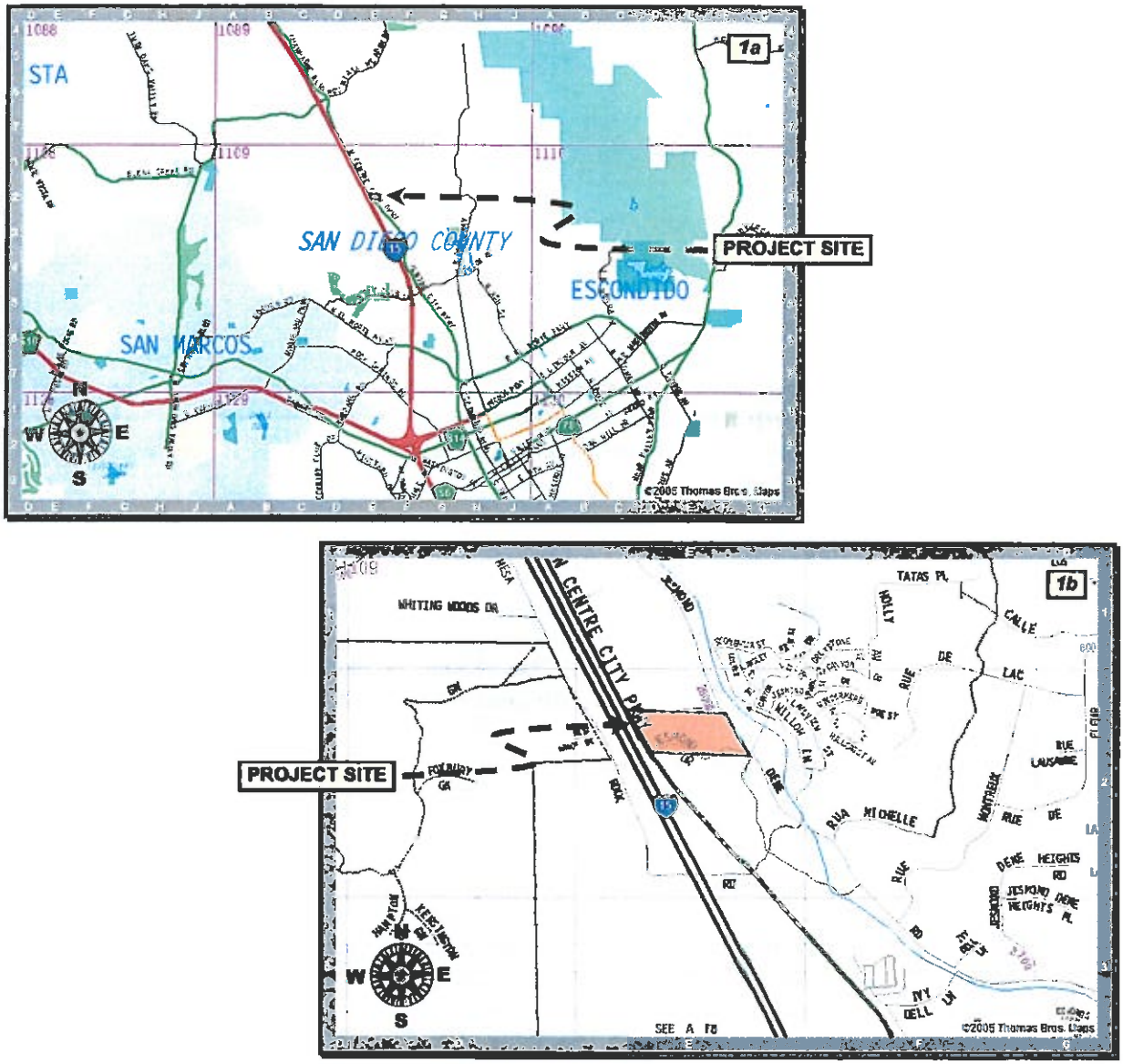
At your request, Investigative Science and Engineering (ISE) have performed an acoustical site assessment of the proposed Rancho Verona Group Home site located in the County of San Diego, California. The results of that survey, as well as predicted future noise levels at the project site, are presented in this letter report.

INTRODUCTION AND DEFINITIONS

Existing Site Characterization

The project site is currently operating an existing group care facility within the 9.75 acre lot. This Lot contains four existing single-story structures, which are capable of providing up to 29 beds. The project site is located in the northern portion of the County of San Diego, California. The project site is located on the eastern side of North Center City Road approximately 1,500 feet from Mesa Rock Road to the South. Jesmond Dean Road borders the project site to the east. The Rancho Verona driveway meanders through the project site mostly in the southern vicinity connecting North Centre City Road and Jesmond Dean Road. Interstate 15 (I-15) to the west provides regional access to the project area (refer to Figures 1a and -b).

The proposed project and all surrounding land uses are designated as RR-1 (rural residential). The project site consists of relatively sloped terrains with elevations on the entire property ranging from approximately 1,380 near the center of the project to 1,400 feet above mean sea level (MSL) at the western and eastern sides of the project site (refer to Figures 2a and –b on Page 3 of this report).



FIGURES 1a and -b: Project Vicinity Maps (Thomas Guide Page 1070 Grid F7)

Project Description

The Ranch Verona Group care facility requests a Major Use Permit (MUP) to allow for the operation of the facility with a maximum of 29 beds (residents). No new use structures would be constructed as part of the MUP. The development plan also does not propose any additional structural modifications to the existing structures. The current site development plan is shown in Figure 3 on page 4 of this report.

FIGURES 2a and -b: Project Site Satellite / Aerial Photographs – (© AirPhoto USA – 1/01)

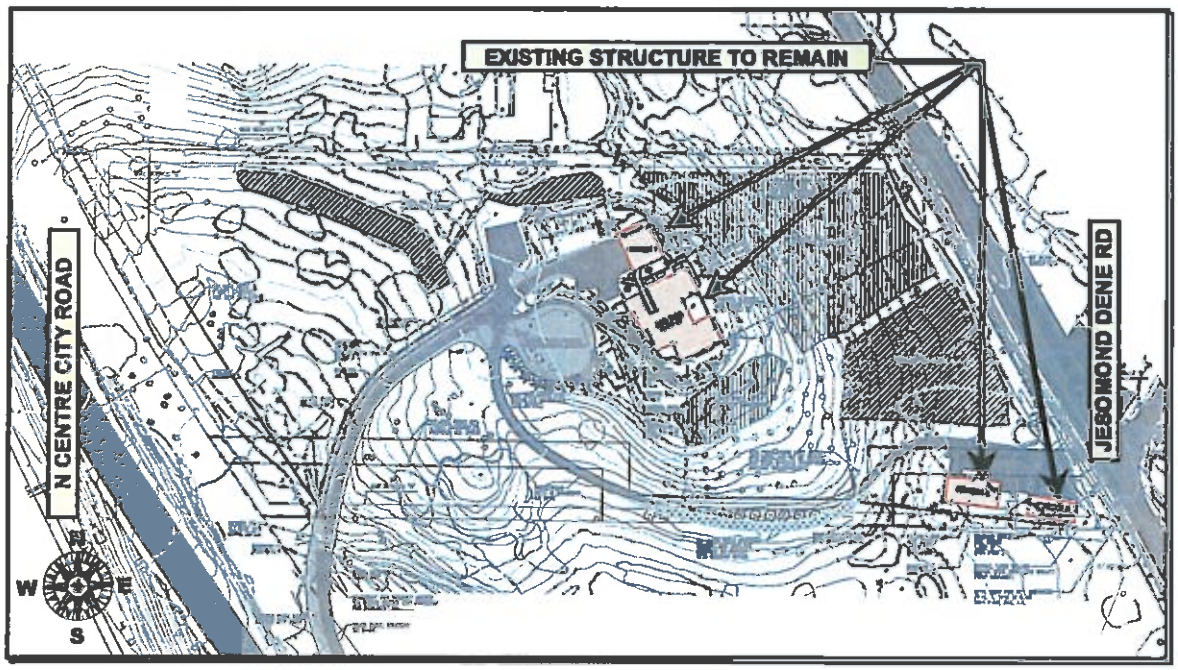


FIGURE 3: Rancho Verona Site Plan (Masson & Associates, INC, 1/05)

Acoustical Definitions

Sound waves are linear mechanical waves. They can be propagated in solids, liquids, and gases. The material transmitting such a wave oscillates in the direction of propagation of the wave itself. Sound waves originate from some sort of vibrating surface. Whether this surface is the vibrating string of a violin or a person's vocal cords, a vibrating column of air from an organ or clarinet, or a vibrating panel from a loudspeaker, drum, or aircraft, the sound waves generated are all similar. All of these vibrating elements alternately compress the surrounding air during forward motion and expand it on the backward movement.

There is a large range of frequencies within which linear waves can be generated, sound waves being confined to the frequency range that can stimulate the auditory organs to the sensation of hearing. For humans this range is from about 20 Hertz (Hz or cycles per second) to about 20,000 Hz. The air transmits these frequency disturbances outward from the source of the wave. Sound waves, if unimpeded, will spread out in all directions from a source. Upon entering the auditory organs, these waves produce the sensation of sound. Waveforms that are approximately periodic or consist of a small number of periodic components can give rise to a pleasant sensation (assuming the intensity is not too high), for example, as in a musical composition. Noise, on the other hand, can be represented as a superposition of periodic waves with a large number of components.

Noise is generally defined as unwanted or annoying sound that is typically associated with human activity and which interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day, and the sensitivity of the individual hearing the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric levels. The loudest sounds that the human ear can hear comfortably are approximately one trillion (or $1x10^{12}$) times the acoustic energy that the ear can barely detect. Because of this vast range, any attempt to represent the acoustic intensity of a particular sound on a linear scale becomes unwieldy. As a result, a logarithmic ratio originally conceived for radio work known as the decibel (dB) is commonly employed.

A sound level of zero "0" dB is scaled such that it is defined as the threshold of human hearing and would be barely audible to a human of normal hearing under extremely quiet listening conditions. Such conditions can only be generated in anechoic or "dead rooms". Typically, the quietest environmental conditions (extreme rural areas with extensive shielding) yield sound levels of approximately 20 dB. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB roughly correspond to the threshold of pain and would be associated with sources such as jet engine noise or pneumatic equipment.

The minimum change in sound level that the human ear can detect is approximately 3 dB. A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sounds loudness. A change in sound level of 10 dB actually represents an approximate 90 percent change in the sound intensity, but only about a 50 percent change in the perceived loudness. This is due to the nonlinear response of the human ear to sound.

As mentioned above, most of the sounds we hear in the environment do not consist of a single frequency, but rather a broad band of frequencies differing in sound level. The intensities of each frequency add to generate the sound we hear. The method commonly used to quantify environmental sounds consists of determining all of the frequencies of a sound according to a weighting system that reflects the nonlinear response characteristics of the human ear. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (or dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of sounds from distant sources that create a relatively steady background noise in which no particular source is identifiable.

For this type of noise, a single descriptor called the Leq (or equivalent sound level) is used. Leq is the energy-mean A-weighted sound level during a measured time interval. It is the 'equivalent' constant sound level that would have to be produced by a given source to equal the average of the fluctuating level measured. For most acoustical studies, the study interval is generally taken as one-hour and is abbreviated *Leq-h*; however, other time intervals are utilized depending on the jurisdictional preference.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded during 10 percent, 50 percent, and 90 percent of a stated time. Sound levels associated with the L10 typically describe transient or short-term events, while levels associated with the L90 describe the steady state (or most prevalent) noise conditions. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the maximum and minimum measured sound level (Lmax and Lmin) indicators. The Lmin value obtained for a particular monitoring location is often called the *acoustic floor* for that location.

Another sound measure employed by the State of California and the County of San Diego is known as the Community Noise Equivalence Level (CNEL) is defined as the "A" weighted average sound level for a 24-hour day. It is calculated by adding a 5-decibel penalty to sound levels in the evening (7:00 p.m. to 10:00 p.m.), and a 10-decibel penalty to sound levels in the night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter evening and nighttime hours.

APPLICABLE SIGNIFICANCE CRITERIA

County of San Diego Noise Regulations

Transportation noise levels in the County of San Diego are governed under Policy 4b in the Noise Element of the County's General Plan. The relevant sections of the Noise Element are cited below and would apply to County defined "Noise Sensitive Areas" applicable to paragraph 1 through 4 of Policy 4b.

1. *"Noise Sensitive Area" means the building site of any residence, hospital, school, library, or similar facility where quiet is an important attribute of the environment.*
2. *Whenever possible, development in San Diego County should be planned and constructed so that noise sensitive areas are not subject to noise levels in excess if 55 dBA CNEL.*
3. *Whenever it appears that new development will result in any (existing or future) noise sensitive areas being subjected to noise levels in excess of 60 dBA CNEL or greater, an acoustical study should be required.*
4. *If the acoustical study shows that noise levels at any noise sensitive areas will exceed 60 dBA CNEL, the development should not be approved unless the following findings are made:*

a) Modifications to the development have been or will be made which reduce the exterior noise level below 60 dBA CNEL; or,

b) If, with the current noise abatement technology, it is infeasible to reduce the exterior CNEL to 60 dBA, then modifications to the development will be made which reduce interior noise below a CNEL equal to 45 dBA. Particular attention shall be given to noise sensitive interior spaces such as bedrooms; and,

c) If finding 'b' above is made, a further finding will be made that there are specifically identified overriding social or economic considerations which warrant approval of the development without modifications as described in 'a' above.

4) If the acoustical study shows that the noise levels at any noise sensitive areas will exceed 75 dBA CNEL; the development should not be approved.

5) Interior noise levels should not exceed 45 dBA CNEL within any habitable living space of any residential unit.

6) For rooms in "Noise Sensitive Areas", which are usually occupied only a part of the day (schools, librarys, or similar), the interior one-hour average sound level, due to noise outside, should not exceed 50 decibles

Operational Noise Standards

The San Diego County Noise Ordinance Section 36.404 governs fixed source and/or operational noise. The applicable sound levels are a function of the time of day and the land use zone. Sound levels are measured at the boundary of the property containing the noise source. The relevant limits are given below in Table 1. In the case where two adjacent property lines differ in zoning, the applicable threshold would be the arithmetic average of the two standards.

TABLE 1: County of San Diego Noise Ordinance Limits

Land Use Zone	Time of Day	1-Hour Average Sound Level (dBA Leq)
R-S, R-D, R-R, R-MH, A-70, A-72, S-80, S-81, S-87, S-88, S-90, S-92, R-V, and R-U	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	50 45
R-R0, R-C, R-M, C-30, and S-86	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	55 50
S-94 and other commercial zones	7 a.m. to 10 p.m. 10 p.m. to 7 a.m.	60 55
M-50, M-52, and M-54	any time	70
S-82 and M-58	any time	70

Source: County of San Diego Noise Ordinance Section 36.404, 1981.

The Rancho Veronoa development is zoned RR (Rural Residential) and is consistent with the surrounding residential land uses of the area. Thus, the standard would be 50.0 dBA Leq-h during the hours of 7 a.m. to 10 p.m. and 45.0 dBA Leq-h during the hours of 10 p.m. to 7 a.m.

State of California CCR Title 24

The California Code of Regulations (CCR), Title 24, Noise Insulation Standards, states that multi-family dwellings, hotels, and motels located where the CNEL exceeds 60 dBA, must obtain an acoustical analysis showing that the proposed design will limit interior noise to less than 45 dBA CNEL. Interior noise standards are typically applied to sensitive areas within the structure where low noise levels are desirable (such as living rooms, dining rooms, bedrooms, and dens or studies). Worst-case noise levels, either existing or future, must be used for this determination. Future noise levels must be predicted at least ten years from the time of building permit application. The County of San Diego has adopted the CCR Title 24 standards.

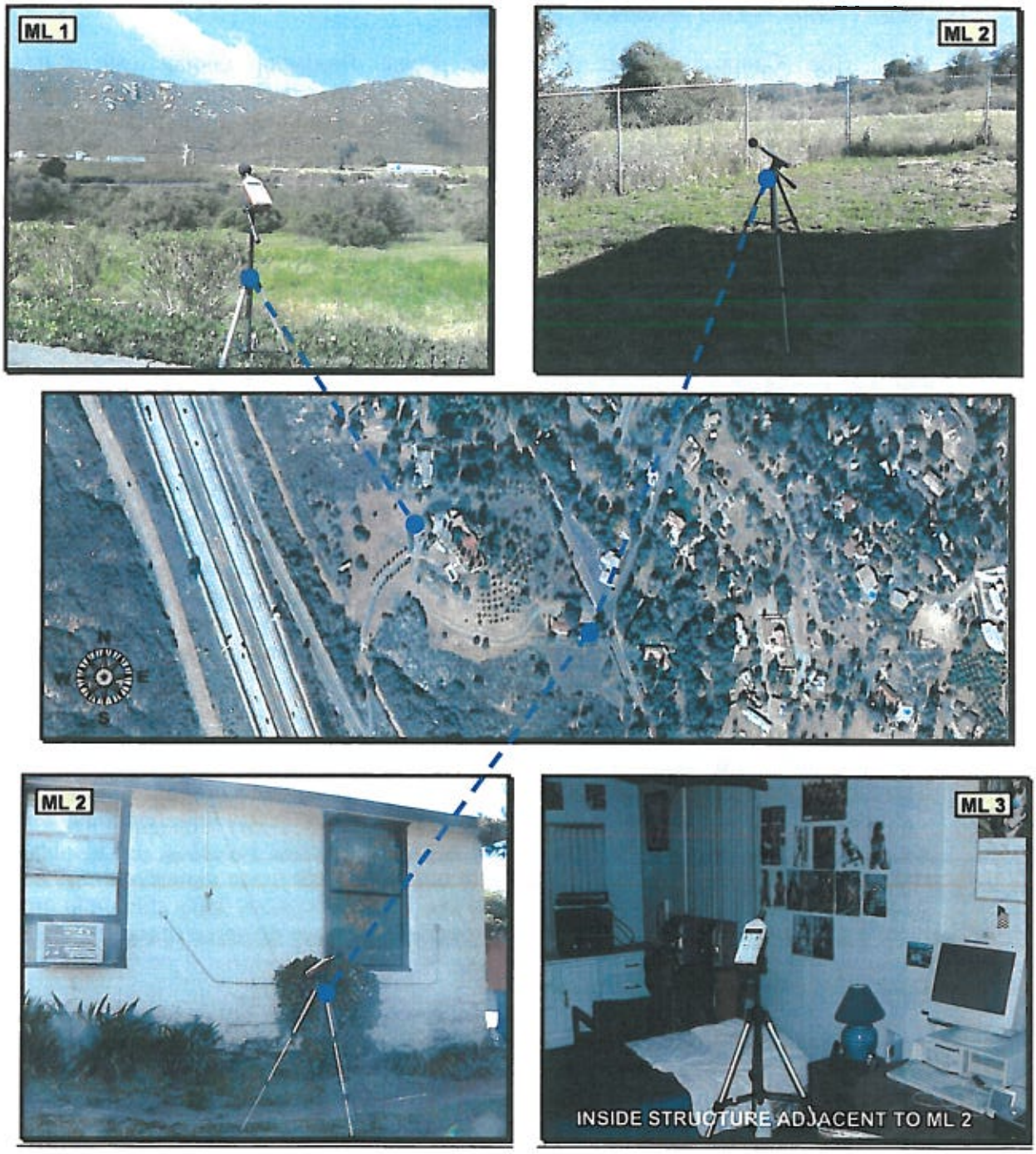
Thus, for the purposes of analysis, the applicable exterior noise design threshold is 60 dBA CNEL. The applicable interior noise standard is 45 dBA Leq-h per the County's Noise Element. Onsite noise generation would be governed by the County's noise ordinance outlined above.

ANALYSIS METHODOLOGY

Site Monitoring Procedure

A Quest Model 2900 ANSI Type 2 integrating sound level meter was used as the data collection device. The meters (denoted as ML 1 through ML 3) were mounted to a tripod approximately five feet above the ground. Two exterior locations (MLs 1 and-2) at building facades) were chosen to represent worst-case noise exposure. This was done in order to capture the existing noise levels within the existing project site. The final monitoring location was inside the existing residential structure closest to Jesmond Dean Road. MLs 2 and -3 were started and stopped in unison in order ascertain the structural attenuation of the existing worst-case structure. These monitoring locations are shown graphically in Figures 4a through –e below.

The measurements were performed on March 29, 2005 and April 4, 2005 during typical peak hour afternoon ambient conditions. All equipment was calibrated before testing at ISE's acoustics and vibration laboratory to verify conformance with ANSI S1-4 1983 Type 2 and IEC 651 Type 2 standards.



FIGURES 4a through -e: Onsite Ambient Noise Monitoring Location (ISE, 3/05, 4/05)

Onsite Traffic-Related Acoustical Modeling

The Caltrans Sound 32 Traffic Noise Prediction Model with California (CALVENO) noise emission factors (*based on FHWA RD-77-108 and FHWA/CA/TL-87/03 standards*) were used to calculate future onsite vehicular traffic noise levels. The Sound 32 model was calibrated in accordance with Appendix E of the FHWA Highway Traffic Noise Prediction Manual (Report RD-77-108) for a normalized Level of Service equal to 'C'. This is also in accordance with Caltrans Technical Noise Supplement (TeNS) sections N-5440 & N-5460 published October 1998.

Model input included a digitized representation of Interstate-15, North Centre City Road, and Jesmond Dean Road as well as any available local site topography, future Average Daily Traffic (ADT) volumes, vehicle mix, and receptor elevations. The roadway and site topography elevations were obtained from the data and plans provided by Masson and Associates dated January 2005. Future traffic volumes were obtained from SANDAGs Enhanced Traffic Projection Model

Model output consisted of peak hour energy-mean A-weighted sound levels (or Leq-h) for each receptor examined. Peak hour traffic values were calculated for a 10% traffic flow pattern and a 95/3/2 (automobiles/medium/heavy-vehicles) percent mix in accordance with the percent mix survey conducted by ISE at the time of noise monitoring. For peak hour traffic percentages between approximately 8 and 12 percent, the energy-mean A-weighted sound level is equivalent to the Community Noise Equivalent Level (CNEL). Outside this range, a maximum variance of up to two dBA occurs between Leq-h and CNEL.

Receptor elevations were considered five feet above the appropriate floor (pad) elevation and were taken at all building façades facing North Centre City Road and Jesmond Dean Road. The model assumed a "hard" site sound propagation rule (i.e., a 3.0-dBA loss per doubling of distance from roadway to receiver) in accordance with the existing and propose site conditions. The modeled receptor locations are identified as red circles as shown in Figure 5 below and represent both noise sensitive areas as well as various locations throughout the project site. These locations were chosen in order to have a good understanding as to how the nearby roadways disperse noise.

Onsite Noise Assessment Approach

Onsite noise generation at the existing Rancho Verona project would consist of, HVAC units. ISE examined these possible noise events for consistency with the applicable property line standards identified in Table 1 above. Sources found to exceed the applicable standards would require appropriate mitigation measures.

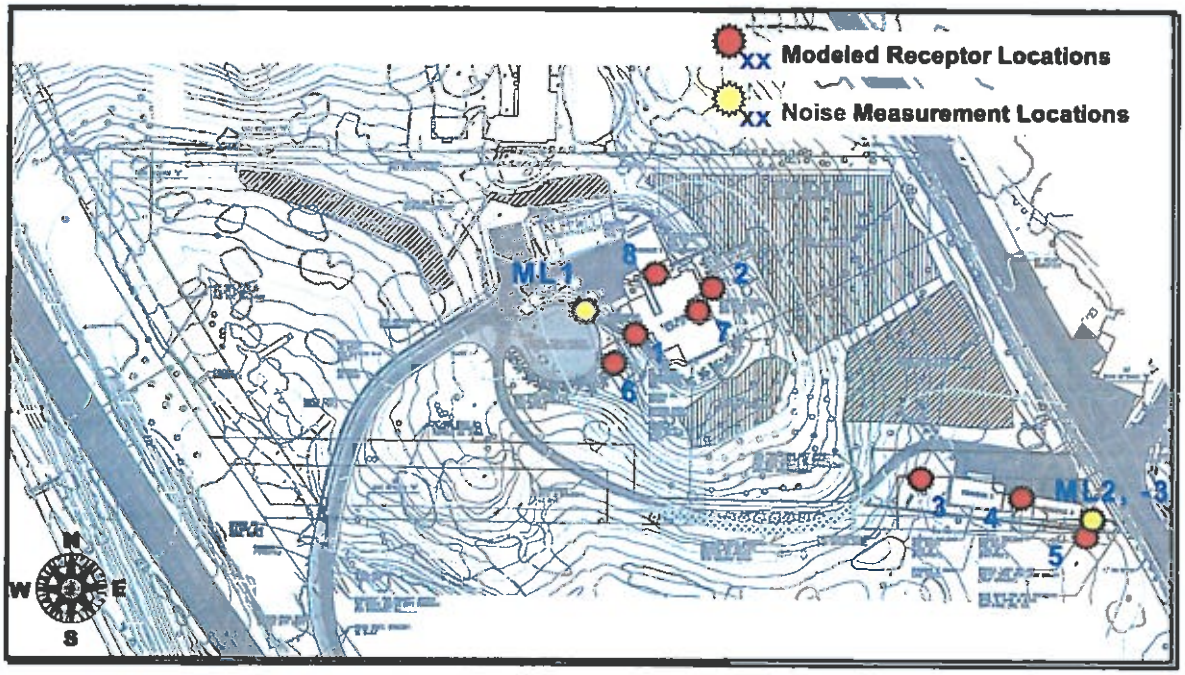


FIGURE 5: Modeled Receptor Locations Ranch Verona (ISE, 9/05)

FINDINGS / RECOMMENDATIONS

Existing Ambient Noise Conditions

Testing conditions during the monitoring period were sunny with an average barometric pressure reading of 29.94 in-Hg, an average southwesterly wind speed of 3 to 5 miles per hour (MPH), and an approximate mean temperature of 78 degrees Fahrenheit. The results of the sound level monitoring are shown below in Table 2. The values for the equivalent sound level (Leq-h), the maximum and minimum measured sound levels (Lmax and Lmin), and the statistical indicators L10, L50, and L90, are given for each monitoring location. The observed existing dominant noise source was from nearby residential activities and infrequent distant sound sources.

Noise levels on site were found to be consistent with the observed community setting and intervening topography. The value for the equivalent sound level (Leq-h) for the project site was found to range between 57 and 59 dBA and was solely a function of the separation distance from the nearest roadways.

TABLE 2: Measured Ambient Sound Levels – Rancho Verona Site

		1-Hour Noise Level Descriptors in dBA					
Site	**Start Time**	**Leq**	**Lmax**	**Lmin**	**L10**	**L50**	**L90**
ML 1	8:00 a.m. – 3/29/05	59.2	63.0	55.0	61.0	59.1	57.1
ML 2	4:30 p.m. – 4/4/05	57.1	79.4	46.1	59.1	51.8	49.4
ML 3	4:30 p.m. – 4/4/05	37.2	59.8	26.6	39.3	30.7	28.7

Monitoring Locations:

- ML 1: Western portion of project site at the existing main building facing N. Centre City Road - GPS 33° 10.757' x 117° 06.774'
- ML 2: Eastern portion of project site facing Jesmond Dean Road approximately five feet form the building structure - GPS 33° 10.701' x 117° 06.648'
- ML 3: **Inside** the existing residence closest to Jesmond Dean Road Approximately five feet from the eastern wall façade.

Estimated Position Error (EPE) = 14 feet.

Background noise levels (i.e., L90 levels) at ML 1 were found to be slightly lower than its energy equivalent counterparts (e.g., Leq-h) indicating the frequent traffic patterns along Interstate 15. Background noise levels at ML 2 were found to be significantly lower then its energy equivalent indicating the infrequent traffic patterns on Jesmond Dean Road. The acoustic floor, as indicated by the Lmin metric, for the site was found to range between 46 and 55 dBA indicating a rural community setting.

ML 3 was placed inside the existing structure, facing Jesmond Dean Road, in order to determine if the structure currently complies with Title 24 standards. The Leq-h for ML 3 was found to be 37.2 dBA during peak hour traffic conditions (which is consistent with the average CNEL level). This is below the established standard of 45 dBA and would therefore comply with Title 24 residential standards. Additionally, the structure was found to afford approximately 20 dBA of noise attenuation approximately five feet form the building shell.

Predicted Future Vehicular Noise Levels

Future vehicular noise levels were analyzed for Interstate 15, Centre City Road and Jesmond Dean Road. According to SANDAG, Interstate 15, N. Centre City Parkway and Jesmond Dean Road are expected to generate approximately 215,000 ADT at 65 MPH, 16,000 at 55 MPH and 5,000 at 45 MPH respectively near the existing project site by the year 2030.

The capacity for a single freeway lane is 1,500 vehicles per hour *(Source: Caltrans Highway Capacity Manual 2002)*. It should be noted, the capacity in a single lane has approached 1,800 vehicles per hour due to shortened headways between vehicles and driver experience (*Source: Caltrans staff and empirical data along freeway segments, 2002*). Thus, peak hour traffic values were calculated using a worst-case

scenario capacity of 14,400 vehicles per hour at 65 MPH with a traffic flow mix of 87.8/3.8/8.4 (automobiles/medium/heavy vehicles) percent along Interstate 15 in accordance with *California Department of Transportation, 2002 Annual Average Daily Truck Traffic on the California State Highway System.*

The results of the acoustical modeling are shown below in Table 3. The acoustical model results are provided as an attachment to this report. Based upon the findings, future exterior traffic noise levels would exceed the County's 60-dBA CNEL noise threshold for the main building residential area and would require external mitigation to comply. A proposed mitigation plan consisting of a nine-foot-high screen wall connecting both the main building and residence one will reduce these future sound levels to below significant. The wall should be of solid construction without any gaps or openings. An access door with self-closing hinges should also be installed for easy access to the usable exterior area. The placement of this mitigation wall is shown in Figure 6 below.

TABLE 3: Acoustical Modeling Results – Rancho Verona Site

Receptor #	Receptor Identification	Description	Ground Level (Unmitigated) dBA CNEL	Ground Level (Mitigated) dBA CNEL
1	MAINBF	Main Building Façade	62.7	62.7
2	MAINBB	Main Building Back Area	59.5	59.5
3	WESTRES2	Western Lower Residence	57.2	57.2
4	CENTER R	Center of Lower Residence	58.3	58.3
5	FACAD RE	Eastern Lower Residence	58.1	58.1
6	TURNAROU	Front Turnaround	61.7	61.7
7	MAIN BU	Main Building Back Area	56.0	56.0
8	MAIN RES	Main Building Residential Usable Area	62.3	59.9

Furthermore, since the buildings provided approximately 20 dBA of attenuation, future noise levels at the worst-case front main building facade (Receptor 1) could reach noise levels as high as 65 dBA CNEL and still be in compliance with Title 24. Worst-case 2030 sound levels at this this selected location are not expected to exceed 62.7 dBA and thus would comply with Title 24. Therefore, no interior noise impacts are expected.

Based upon the aforementioned mitigation, structural obstructions, topography and roadway contributions, the approximate 60 dBA CNEL contours were developed and are shown in Figure 7 below. These contours represent the approximate location of the equal sound exposure 60 dBA CNEL curve considered five-feet normal to the surface elevation. The area between the 60 dBA CNEL contours is considered usable exterior space. All usable exterior space currently being used or which is proposed by Rancho Verona is contained within this area. No additional mitigation beyond the nine-foot-high screen wall is required.

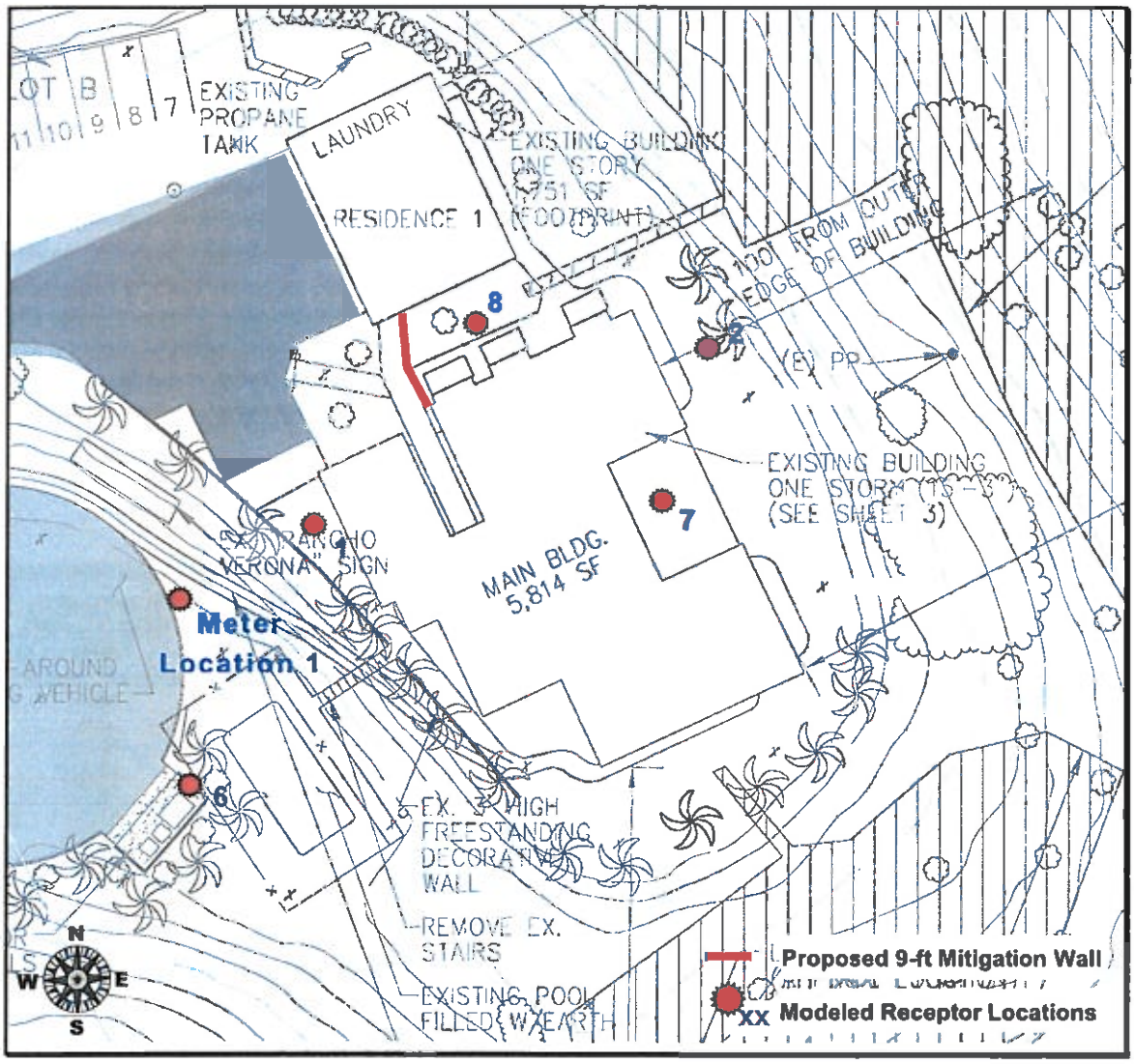


FIGURE 6: Modeled Receptor Locations Ranch Verona (ISE, 9/05)

Expected Outdoor Operational HVAC Noise Levels

Operational noise levels onsite consist of small residential HVAC systems installed within window openings. These sources would be small and would not exceed the counties noise ordinance.

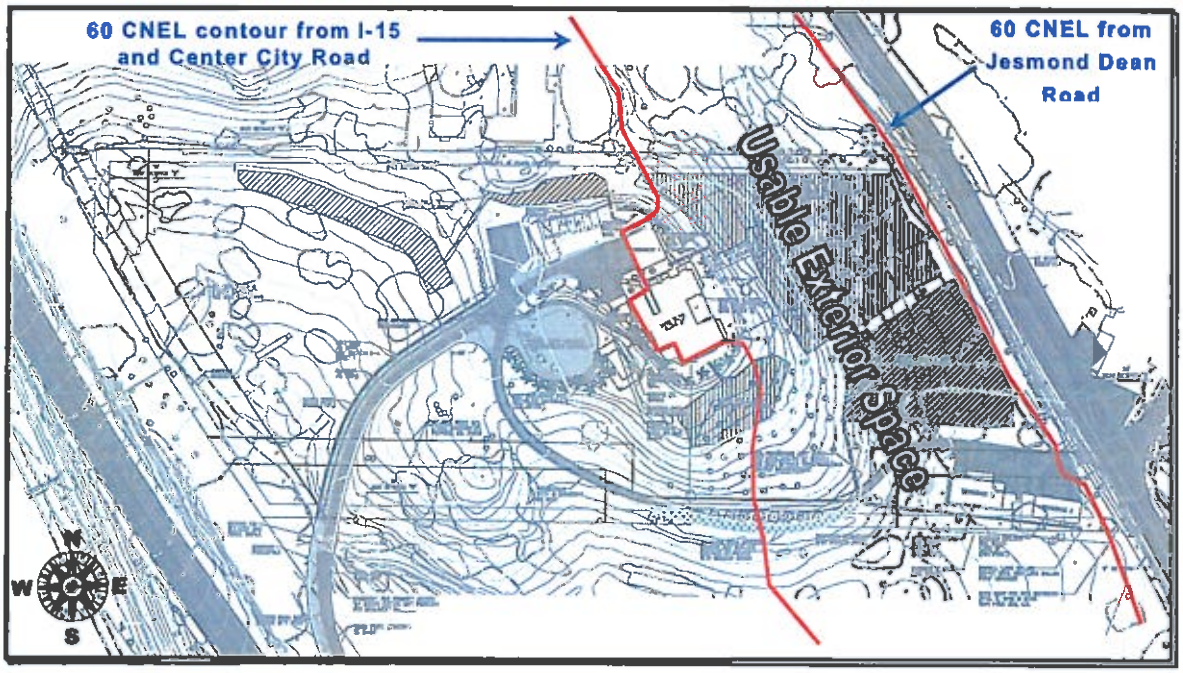


FIGURE 7: Mitigated 60 dBA CNEL Contour Plot (ISE, 9/05)

Should you have any questions regarding the above conclusions, please do not hesitate to contact me at (858) 451-3505.

Sincerely,

Rick Tavares, Ph.D.
Project Principal
Investigative Science and Engineering, Inc.

Cc. Ryan Taylor, ISE

Attachments: Sound32 Traffic Noise Prediction Model Input Decks

S32 Input Deck – Unmitigated Future Conditions

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RANCHO VERONA MUP
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 1520 , 55 , 48 , 55 , 32 , 55
T-PEAK HOUR TRAFFIC CONDITIONS, 2
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T-PEAK HOUR TRAFFIC CONDITIONS, 3
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SOUND32 - RELEASE 07/30/91

 TITLE: RANCHO VERONA MUP
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BARRIER DATA
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BAR ELE	0	1	2	3	4	5	6	7	BAR ID	LENGTH	TYPE
1	-	0.*							B1 P1	230.8	BERM
2	-	0.*							B1 P2	419.6	BERM
3	-	0.*							B1 P3	415.2	BERM
4	-	0.*							B1 P4	226.5	BERM
5	-	0.*							B2 P1	249.6	BERM
6	-	0.*							B2 P2	203.5	BERM
7	-	0.*							B2 P3	185.5	BERM
8	-	0.*							B2 P4	249.5	BERM
9	-	0.*							B2 P5	115.3	BERM
10	-	10.*							B3 P1	81.8	MASONRY
11	-	10.*							B3 P2	69.1	MASONRY
12	-	10.*							B3 P3	20.1	MASONRY
13	-	10.*							B3 P4	21.9	MASONRY
14	-	10.*							B3 P5	51.5	MASONRY
15	-	10.*							B3 P6	33.1	MASONRY
16	-	10.*							B3 P7	19.7	MASONRY
17	-	10.*							B3 P8	30.0	MASONRY
18	-	10.*							B3 P9	19.7	MASONRY
19	-	10.*							B3 P10	30.0	MASONRY
20	-	0.*							B4 P1	22.6	BERM
21	-	0.*							B4 P2	69.9	BERM
22	-	0.*							B4 P3	16.0	BERM
23	-	0.*							B4 P4	66.6	BERM
24	-	0.*							B4 P5	77.9	BERM
25	-	0.*							B4 P6	84.4	BERM
26	-	0.*							B5 P1	40.2	BERM
27	-	0.*							B5 P2	53.4	BERM
28	-	0.*							B5 P3	86.4	BERM
29	-	0.*							B5 P4	88.2	BERM
30	-	0.*							B5 P5	72.9	BERM
31	-	0.*							B5 P6	159.4	BERM
32	-	0.*							B5 P7	411.2	BERM
33	-	3.*							B6 P1	39.7	MASONRY
34	-	3.*							B7 P1	45.3	MASONRY
35	-	3.*							B7 P2	45.5	MASONRY
36	-	0.*							B8 P1	82.6	BERM
37	-	0.*							B8 P2	68.5	BERM
38	-	0.*							B8 P3	102.1	BERM
39	-	0.*							B8 P4	112.8	BERM
40	-	0.*							B9 P1	39.0	BERM
41	-	0.*							B9 P2	52.8	BERM
42	-	0.*							B9 P3	46.2	BERM
43	-	10.*							B10 P1	36.7	MASONRY
44	-	10.*							B10 P2	46.5	MASONRY
45	-	10.*							B10 P3	36.7	MASONRY
46	-	10.*							B10 P4	46.5	MASONRY
47	-	0.*							B11 P1	26.2	MASONRY

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 48     -  10.*                                    B12 P1      31.3  MASONRY
 49     -  10.*                                    B12 P2      60.5  MASONRY
 50     -  10.*                                    B12 P3      29.3  MASONRY
 51     -  10.*                                    B12 P4      60.3  MASONRY

 52     -  10.*                                    B13 P1      25.3  MASONRY
 53     -  10.*                                    B13 P2      54.6  MASONRY
 54     -  10.*                                    B13 P3      25.3  MASONRY
 55     -  10.*                                    B13 P4      54.6  MASONRY
 ---------------------------------------------------------------------------
        0    1    2    3    4    5    6    7

REC REC ID     DNL  PEOPLE   LEQ(CAL)
 ---------------------------------
  1  MAINBF    65.      10.   62.7
  2  MAINBB    65.      10.   59.5
  3  WESTRES2  65.      10.   57.2
  4  CENTER R  65.      10.   58.3
  5  FACAD RE  65.      10.   58.1
  6  TURNAROU  65.      10.   61.7
  7  MAIN BU   65.      10.   56.0
  8  MAIN RES  65.      10.   62.3
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S32 Input Deck – Mitigated Future Conditions

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RANCHO VERONA MUP
T-PEAK HOUR TRAFFIC CONDITIONS, 1
 1520 , 55 , 48 , 55 , 32 , 55
T-PEAK HOUR TRAFFIC CONDITIONS, 2
 475 , 45 , 15 , 45 , 10 , 45
T-PEAK HOUR TRAFFIC CONDITIONS, 3
 12292 , 65 , 947 , 65 , 1209 , 55
L-CENTER CITY ROAD, 1
N,4594,4436,928,
N,4450.,4650,942,
N,4314,4867,956,
N,4086,5310,980,
L-JESMOND DEAN ROAD, 2
N,5675,4464,888,
N,5615,4591,894,
N,5570,4674,890,
N,5429,4919,900,
N,5262,5180,902,
L-INTERSTATE-15, 3
N,4402,4342,943,
N,4133,4874,970,
N,3996,5093,976,
N,3826,5391,980,
B-ROADWAY EDGE, 1 , 1 , 0 ,0
4500.,4340,958,958,
4398.,4547,962,962,
4212.,4923,970,970,
4032.,5297,980,980,
3945.,5506,986,986,
B-ROADWAY EDGE, 2 , 1 , 0 ,0
4142,5306,996,996,
4242,5079,968,968,
4328,4895,956,956,
4423,4736,946,946,
4563,4530,932,932,
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4628,4435,926,926,
B-MAIN BUILDING, 3 , 2 , 0 ,0
5063.,4934,956,966,
4990.,4897,956,966,
5029.,4840,956,966,
5047.,4849,956,966,
5056.,4829,956,966,
5103.,4850,956,966,
5089.,4880,956,966,
5071.,4872,956,966,
5058.,4899,956,966,
5076.,4907,956,966,
5063.,4934,956,966,
B-SLOPE BARRIER, 4 , 1 , 0 ,0
4940.,4918,958,958,
4918.,4923,956,956,
4890.,4987,956,956,
4875.,4991,952,952,
4831.,5041,952,952,
4804.,5114,954,954,
4737.,5165,960,960,
B-SLOPE BARRIER, 5 , 1 , 0 ,0
5659.,4445,886,886,
5641.,4480,894,894,
5618.,4528,898,898,
5581.,4606,900,900,
5533.,4680,900,900,
5500.,4745,900,900,
5417.,4881,904,904,
5198.,5229,905,905,
B-DECWALL BARRIER, 6 , 2 , 0 ,0
5035,4826,957,960,
5009,4856,957,960,
B-DECWALL BARRIER, 7 , 2 , 0 ,0
5007,4857,957,960,
4975,4889,958,961,
4940,4918,958,961,
B-FRONT SLOPE, 8 , 1 , 0 ,0
5075.,4758,948,948,
4996.,4782,946,946,
4933.,4809,946,946,
4856.,4876,948,948,
4836.,4987,950,950,
B-REAR SLOPE, 9 , 1 , 0 ,0
5113.,4842,957,957,
5112.,4881,956,956,
5090.,4929,956,956,
5050.,4952,957,957,
B-RESIDENCE 1, 10 , 2 , 0 ,0
5036.,4947,956,966,
5003.,4931,956,966,
4983.,4973,956,966,
5016.,4989,956,966,
5036.,4947,956,966,
B-MITIGATION WALL, 11 , 2 , 0 ,0
5003.,4931,956,965,
5020.,4911,956,965,
B-RESIDENCE 3, 12 , 2 , 0 ,0
5420.,4693,907,917,
5416.,4662,907,917,
5356.,4670,907,917,
5360.,4699,907,917,
5420.,4693,907,917,
B-RESIDENCE 3, 13 , 2 , 0 ,0
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5508.,4671,904,914,
5504.,4646,904,914,
5450.,4654,904,914,
5454.,4679,904,914,
5508.,4671,904,914,
R, 1 , 65 ,10
4990,4883,962.,MAINBF
R, 2 , 65 ,10
5090,4914,962.,MAINBB
R, 3 , 65 ,10
5350,4681,913.,WESTRES2
R, 4 , 65 ,10
5437,4664,913.,CENTER R
R, 5 , 65 ,10
5504,4640,907.,FACAD RE
R, 6 , 65 ,10
4989,4845,953.,TURNAROU
R, 7 , 65 ,10
5070,4891,961.,MAIN BU
R, 8 , 65 ,10
5029,4925,961.,MAIN RES
C,C

SOUND32 - RELEASE 07/30/91

 TITLE: RANCHO VERONA MUP

          BARRIER DATA
          ************

 BAR              BARRIER HEIGHTS                BAR
 ELE    0    1    2    3    4    5    6    7    ID        LENGTH  TYPE
 ------------------------------------------------------------------------
  1     -   0.*                                  B1 P1      230.8  BERM
  2     -   0.*                                  B1 P2      419.6  BERM
  3     -   0.*                                  B1 P3      415.2  BERM
  4     -   0.*                                  B1 P4      226.5  BERM

  5     -   0.*                                  B2 P1      249.6  BERM
  6     -   0.*                                  B2 P2      203.5  BERM
  7     -   0.*                                  B2 P3      185.5  BERM
  8     -   0.*                                  B2 P4      249.5  BERM
  9     -   0.*                                  B2 P5      115.3  BERM

 10     -  10.*                                  B3 P1       81.8  MASONRY
 11     -  10.*                                  B3 P2       69.1  MASONRY
 12     -  10.*                                  B3 P3       20.1  MASONRY
 13     -  10.*                                  B3 P4       21.9  MASONRY
 14     -  10.*                                  B3 P5       51.5  MASONRY
 15     -  10.*                                  B3 P6       33.1  MASONRY
 16     -  10.*                                  B3 P7       19.7  MASONRY
 17     -  10.*                                  B3 P8       30.0  MASONRY
 18     -  10.*                                  B3 P9       19.7  MASONRY
 19     -  10.*                                  B3 P10      30.0  MASONRY

 20     -   0.*                                  B4 P1       22.6  BERM
 21     -   0.*                                  B4 P2       69.9  BERM
 22     -   0.*                                  B4 P3       16.0  BERM
 23     -   0.*                                  B4 P4       66.6  BERM
 24     -   0.*                                  B4 P5       77.9  BERM
 25     -   0.*                                  B4 P6       84.4  BERM

 26     -   0.*                                  B5 P1       40.2  BERM
 27     -   0.*                                  B5 P2       53.4  BERM
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28	-	0.*	B5 P3	86.4	BERM
29	-	0.*	B5 P4	88.2	BERM
30	-	0.*	B5 P5	72.9	BERM
31	-	0.*	B5 P6	159.4	BERM
32	-	0.*	B5 P7	411.2	BERM
33	-	3.*	B6 P1	39.7	MASONRY
34	-	3.*	B7 P1	45.3	MASONRY
35	-	3.*	B7 P2	45.5	MASONRY
36	-	0.*	B8 P1	82.6	BERM
37	-	0.*	B8 P2	68.5	BERM
38	-	0.*	B8 P3	102.1	BERM
39	-	0.*	B8 P4	112.8	BERM
40	-	0.*	B9 P1	39.0	BERM
41	-	0.*	B9 P2	52.8	BERM
42	-	0.*	B9 P3	46.2	BERM
43	-	10.*	B10 P1	36.7	MASONRY
44	-	10.*	B10 P2	46.5	MASONRY
45	-	10.*	B10 P3	36.7	MASONRY
46	-	10.*	B10 P4	46.5	MASONRY
47	-	9.*	B11 P1	26.2	MASONRY
48	-	10.*	B12 P1	31.3	MASONRY
49	-	10.*	B12 P2	60.5	MASONRY
50	-	10.*	B12 P3	29.3	MASONRY
51	-	10.*	B12 P4	60.3	MASONRY
52	-	10.*	B13 P1	25.3	MASONRY
53	-	10.*	B13 P2	54.6	MASONRY
54	-	10.*	B13 P3	25.3	MASONRY
55	-	10.*	B13 P4	54.6	MASONRY

0 1 2 3 4 5 6 7

REC	REC ID	DNL	PEOPLE	LEQ(CAL)
1	MAINBF	65.	10.	62.7
2	MAINBB	65.	10.	59.5
3	WESTRES2	65.	10.	57.2
4	CENTER R	65.	10.	58.3
5	FACAD RE	65.	10.	58.1
6	TURNAROU	65.	10.	61.7
7	MAIN BU	65.	10.	56.0
8	MAIN RES	65.	10.	59.9